

DEMOCRACY AND ECONOMIC GROWTH: A SOCIAL LEVEL MEASUREMENT
OF GROWTH

by
Lina Valeria Garcia

A capstone project submitted to Johns Hopkins University in conformity with the
requirements for the degree of Master of Science in Government Analytics

Baltimore, Maryland
August, 2019

© 2019 Lina Valeria Garcia
All Rights Reserved

Abstract

There are contradictory findings in the literature about the effect democracy has on economic growth. In the current literature, the research indicates that democracy positively influences economic growth directly as it ensures property rights and improves business environment through advanced technological innovation. Yet, there is substantial research that states that there is no evidence that democracy has a considerable effect on economic growth. This article examines individual/ country specific indicators such as Human Rights Protection Score, Political Regime Score, Child Mortality Rates, and Years of Schooling and the effects this has on economic growth, measured by GDP per capita. This article utilizes a pooled time series cross sectional analysis to analyze the said variables from 1985-2014 in 145 countries. The existing literature analyzes hard indicators such as property rights and technological innovation to measure economic growth. This article takes a different approach as it aims to research a more social aspect of countries and how this effects GDP per capita. This study finds that years of schooling is the most significant variable affecting GDP per capita.

Table of Contents

Abstract	ii
Introduction.....	1
Literature Review & Theoretical Framework.....	2
Data and Methods	8
Results.....	11
Conclusion	16
References.....	19
Curriculum Vita	21

Introduction

The current literature surrounding the effect democracy has on economic growth has been of great debate. There have been several theories regarding how these two variables influence each other. The research states that the effects of democracy on growth is asymmetrical, thus it is of great value to add to the existing literature with the end goal to help educate and guide new countries to be economically stable. The popular belief is that democratic countries are more likely to experience economic growth as financial markets are liberalized and ensures property rights and improves business environment.¹ This research aims to examine individualistic factors such as Human Rights Protection Score, Political Regime Score, Child Mortality Rate, and Years of Schooling on economic growth measured as GDP per capita. Previous research has used business indicators such as physical capital, technological innovation, investments, property rights, and other business indicators to measure growth. To address these softer indicators and how they impact growth, the dataset consists of 145 countries from 1985 to 2014 with the variables mentioned across these years. The results were gathered using a pooled time series cross-section analysis to measure these variables over time. The results do not support the notion that democracy aids economic growth. Democracy in this study is coded as Political Regime Score, this variable ranges -10 (autocracy) to +10 (full democracy). This study shows that Years of Schooling is the most significant variable, followed by Human Rights Protection Score, Child Mortality Rate, and Political Regime Score. This study finds Schooling to be the most significant indicator of

1. Muhammad Ishtiaq, Muhammad Tariq Majeed, and Muhammad Sohail, *Financial Sector, Democracy and Economic Growth: A Panel Data Analysis*, (Pakistan Development Review, 2016), 449.

economic growth as a one-year increase in schooling is associated with a \$3,914 increase in GDP per capita. While other factors, such as human rights and child mortality rates, play a part in a nation's GDP, it is of note that on average a one-point increase in Political Regime Score, the variable used to measure democracy, is associated with a decrease of \$236 in a country's GDP per capita. This result contradicts the notion that democracy has a positive influence on economic growth. These findings are important as it can be of great use to countries who are seeking independence or are newly independent countries, that are striving for economic growth to have information regarding kinds of regimes should be in place for the country to succeed financially. From these results, we can gather that perhaps public education or making education affordable and accessible will improve the country's total economic output, thus making the country more prosperous.

Literature Review & Theoretical Framework

Democracy indirectly impacts economic growth

The article, *Financial Sector, Democracy and Economic Growth: A Panel Data Analysis*, infers that democracy influences economic growth indirectly through channels of human capital, physical capital, lack of corruption, technological innovations, investment, education, governance, and state strength.² The authors indicated that critics of democracy argue that democratic governments remain under huge pressure from the public to increase current consumption. However, democracy protects property rights and hence increases economic growth. Democracies are more adaptive to technological innovations because of high education and human capital.³ The interaction of the financial sector and democracy insert a negative

2. Muhammad Ishtiaq, Muhammad Tariq Majeed, and Muhammad Sohail, *Financial Sector, Democracy and Economic Growth: A Panel Data Analysis*, (Pakistan Development Review, 2016), 438.

3. Ibid., 438.

impact on democracy. It may be that it is not necessary that financial markets are liberalized under democracy to gain maximum benefits in terms of growth.⁴ In conclusion, democracies positively influence economic growth directly as it ensures property rights and improves business environment through advanced technological innovation and improved human capital. However its indirect impact through channels of money supply, market capitalism and credit availability to private sector is negative.⁵

Authors Hristos Doucouliagos and Mehmet Ali Ulubaşoğlu challenge the research that states there is an inconclusive relationship of the impact of democratic versus authoritarian regimes on growth. The authors found that there is, on average, no evidence that democracy has a detrimental effect on economic growth.⁶ Moreover, there is no accumulated evidence of democracy being detrimental to economic growth. While the direct effect is found to be zero, democracy has significant indirect effects on growth through various channels. Democracy has a favorable impact on human capital formation, and on the level of economic freedom, inflation, and political instability. Additionally, while there is no evidence of a democracy-growth effect for all countries pooled together, there are clear regional effects.⁷ Overall, democracy's net effect on the economy does not seem to be detrimental.⁸

In another article titled *The Political Economy of Growth* the authors predicted the effect of democracy is largely indirect through increased life expectancy in poor countries and increased secondary education in poor countries.⁹ The authors find that democracy does not have a statistically significant direct effect on growth. Instead, the effect of democracy is largely indirect

4. Ibid., 449.

5. Ibid., 449.

6. Ibid., 67.

7. Ibid., 78.

8. Ibid., 78.

9. Matthew A., Baum and David A. Lake, *The Political Economy of Growth: Democracy and Human Capital*, (American Journal of Political Science, 2003), 333.

through increased life expectancy in poor countries and increased secondary education in nonpoor countries (countries with per capita GDP lesser than \$2,500.)¹⁰ Among poorer countries, democracy exerts a significant positive effect on life expectancy, thus on growth.¹¹ However, in nonpoor countries increases in democracy have no statistically significant effect on economic growth, even indirectly. As predicted, life expectancy is likely to matter more to newly enfranchised voters in developing than in developed countries.¹² Where it is significant, the indirect effect of democracy through life expectancy or secondary education is positive, indicating that as countries become more democratic, growth increases.¹³

Most studies of democracy test its direct impact on economic growth and find no result. Authors A. Cooper Drury, Jonathan Kriekhaus, and Michael Lusztig argue that the negative effect of corruption is mediated by the political process in which corruption occurs and that democracy will mitigate or reduce that negative effect.¹⁴ Using time-series cross-sectional data for over 100 countries from 1982 – 1997, the authors conclude that corruption does not have a significant effect on economic growth in democracies, while non-democracies suffer significant economic harm from corruption.¹⁵ These results show that corruption has a negative effect in authoritarian regimes but not democratic regimes.¹⁶

Author Jonathan Kriekhaus argues that the answer to whether political democracy inhibits or facilitates economic growth depends on the regional political context within with

10. Ibid., 333.

11. Ibid., 343.

12. Ibid., 343.

13. Ibid., 344.

14. A. Cooper Drury, Jonathan Kriekhaus, and Michael Lusztig, *Corruption, Democracy and Economic Growth*, (International Political Science Review, 2006), 133.

15. Ibid., 122.

16 Ibid., 131.

democracy functions.¹⁷ However, democracy has had diametrically opposed effects in Latin America and Asia in comparison to Africa. In Latin America and Asia, democracy has a significant negative effect.¹⁸ However, in Africa evidence shows that democracy has a positive effect on economic growth. The author concluded that democracy does have an influence in Africa, but that the effect is weaker than in Latin America and Asia.¹⁹ Thus, regime type has an influence on economic effects. Democracy can constrain growth in countries where societal groups demand extensive redistribution or democracy can facilitate growth where there is a need to evict corrupt public officials.²⁰

In another study between democracy and economic growth, the author concludes that countries starting with lower levels of per capita income have higher initial growth rates which tend to slow down as income levels converge with those of richer countries.²¹ One possible component of this is that countries adopt democratic forms of government during the development process.²² However it is less clear how or why certain features of democratic government might help or affect subsequent growth.²³

Mancur Olson, author of *Rise and Decline of Nations*, predicts that the best growth prospects should present where there is recent social upheaval but that long-term stability is expected to follow.²⁴ Olson's concept of "institutional sclerosis" hypothesizes that special interest groups will accumulate over time in stable societies and eventually reduce the economic

17. Jonathan Krieckhaus, *Democracy and Economic Growth: How Regional Context Influences Regime Effects*, (British Journal of Political Science, 2006), 317.

18. Ibid., 339.

19. Ibid., 339.

20. Ibid., 339.

21. John F. Helliwell, *Empirical Linkages between Democracy and Economic Growth*, (British Journal of Political Science, 1994) 244.

22. Ibid., 244.

23. Ibid., 245.

24. Ibid., 21.

efficiency of the economy in which they operate.²⁵ These effects are due to the formation of special interest groups. If the interest groups or their means of influencing policy are destroyed, growth prospects would be enhanced. Instability, such as revolutions, is expected to destroy the influence of these groups and their avenues for controlling social resources.²⁶ Constant instability, however, will also open new avenues for rent seeking. Following a review of over 50 separate works, reveal that this theory of is not universally supported as there has not been systematic bias in favor of or opposition to this theory.²⁷

Democracy produces higher economic growth

In another school of thought, economists consider technological change the central determinant of long-term growth and if democracy spurs technological change it likely also fosters prosperity in the long run.²⁸ Additionally, technology diffusion is slowed down because dictators manipulate civil liberties and promote policies that inhibit idea exchanges. Dictators are unable separate politically dangerous from economic efficiency-enhancing information.²⁹ The effect of regime type on growth is likely contingent on factors such as the leaders' personal characteristics of the regime's core supporters. Nevertheless, results reported indicated that democracies produce higher economic growth than autocracies.³⁰

Post-socialist countries during the period 1990-2008 showed that political freedom did not influence economic growth. However, the results suggest that economic growth was a cause

25. Jac C. Heckelman, *The Rise and Decline of Nations after 25 Years*, (Southern Economic Journal, 2007) 18.

26. Ibid., 20.

27. Ibid, 18.

28. Carl Knutsen, *Why Democracies Outgrow Autocracies in the Long Run: Civil Liberties, Information Flows and Technological Change*, (Kykkos, 2015), 358.

29. Ibid., 380.

30. Ibid., 380.

of political freedom.³¹ The results did not give any basis to conclude that political freedom was a cause of economic growth in the period analyzed (1990-2008).³² Political freedom appeared to be neutral for economic growth in transition countries. Transition countries refer to countries' economies as they change from central planning to free markets. However, economic growth could have influenced the level of political freedom.³³ Economic freedom, which has an impact on economic growth in developed countries, has the same impact in transition countries; on average, for the whole period since the beginning of the transition, the introduction of liberalization and a market economy has had a positive impact on the pace of economic growth.³⁴

How long a country has been democratic matters

The effect of democracy on growth exhibits an asymmetrical pattern that is dependent on a country's accumulated stock of democracy.³⁵ The study in *Democracy and Growth: A Perspective from Democratic Experience*, shows that there is a democratic experience threshold that limits the ability of developing countries to benefit from democratization. For countries whose democratic experiences cannot exceed a threshold level, democracy has a limited effect in terms of changing economic activity and its enforcement is neither harmful nor helpful in terms of economic growth.³⁶ Countries whose accumulated democratic experience has passed the threshold level, the effect of the political regime on growth still has to depend on the current status of the political regime.³⁷ The authors indicate that if democracy really matters for growth, then this effect is best evaluated from a country's regime history (stock) rather than from the

31. Dawid Piatek, Katarzyna Szarzec, and Michal Pilc, *Economic Freedom, Democracy and Economic Growth: A Causal Investigation in Transition Countries*, (Post-Communist Economies, 2013), 283.

32. Ibid., 283.

33. Ibid., 283.

34. Ibid., 283.

35. Ma Tay-Cheng and Lishu Ouyang, *Democracy and Growth: A Perspective from Democratic Experience*, (Economic Inquiry, 2016), 1790.

36. Ibid., 1790.

37. Ibid., 1790.

current status of the level of democracy (flow)³⁸. Only in democratic countries with prolonged experiences of democratic rule can political democracy promote economic growth³⁹.

Data and Methods

The results of this data set are from a pooled time series cross-section analysis (TSCS), this kind of pooled analysis combines time series for several cross-sections. Pooled TSCS data consists of “repeated observations on fixed units.” Thus, the total number of observations equals the number of cross sections (I) multiplied by the number of time points (T).⁴⁰ An Ordinary Least Squares (OLS) regression is not appropriate for this type of data because time-series observations are clustered within countries, inducing correlation among observations. This violates the assumption of independence of observations, which is required for unbiased estimation of variances and standard errors in OLS regression.⁴¹ The fixed-effects model was used instead of the random effects model as the fixed effects Hausman test shows the fixed effects model to be a better fit.

This paper presents an analysis of the kind of effect that Human Rights Protection Score, Political Regime Score, Child Mortality Rate, and Total Years of Schooling in adults has on economic growth, measured in GDP per capita. The independent variable GDP per capita is valuable in assessing economic growth as this measures the total economic output of a country over a long period of time. This dataset includes 145

38. Ibid., 1792.

39. Ibid., 1790.

40. Lawrence Raffalovich and Chung Rakkoo, *Models for Pooled Time-Series Cross Section Data*, (International Journal of Conflict and Violence, 2014), 210.

41. Ibid., 210.

countries and 3,466 observations from 1985 to 2014 (Table 1). The variables in the dataset were published in Our World in Data, an open access and open source website. The dataset uses the Human Rights Protection Score, first developed by Schnakenberg and Fariss in 2014 and updated in 2019. This variable varies from -3.07 to 5.13 (the higher the better). The Human Rights Protection Score focuses on the protection of the physical integrity of citizen. This accounts for torture, government killing, political imprisonment, extrajudicial executions, mass killings and disappearances.⁴² The variable political regime score measures democracy from -10 (autocracy) to +10 (democracy). Thirdly, the variable Child Mortality Rate is the probability per 1,000 that a child will die before reaching the age of 5. Lastly, the variable Years of Schooling is the average years of total schooling across all education levels. The table below shows the summary statistics of the variables. The GDP per capita ranges from \$142 to \$159,825 and the average GDP per capita for the data set is \$13,862. Similarly, the average Human Rights Protection Score is .13, this variable ranges from -3.07 to 5.13. Countries whose Human Rights Protection Score exceeds 0.5 is considered a democracy, therefore the average countries in the dataset are democracies. Political regime score ranges -10 to 10, the average political regime score is 3.8 indicating the average regime type of countries are anocracies. The variable child mortality rate ranges from .25 to 33 and the average is mortality rate is 5, indicating that on average there is a 5% probability per 1,000 that a child will die before the age of 5. Lastly, the variable average years schooling which measures the average total years of schooling for the adult population. This value ranges

42. Max Roser, "Democracy" *University of Oxford Global Change Data Lab*, 2019

from less than one year (.29) to 14 years of schooling, the average of schooling in adults is 7 years.

Table 1

Descriptive Statistics

Variable	Obs	Mean	SD	Min	Max
<i>Dependent Variable</i>					
GDP Per Capita (USD)	3,466	\$13,862	\$16,976	\$142	\$159,825
<i>Independent Variables</i>					
Country	3,466	73	41	1	145
Year	3,466	2001	7	1985	2014
Human Rights Score	3,466	.12	1.46	-3.07	5.13
Political Rights Score	3,466	3.8	6.38	-10	10
Child Mortality Rates	3,466	5.33	5	.25	33
Average Schooling Years	3,466	76	3	.29	14

Results

Table 2

Report of means and standard deviation for panel data

Variable		Mean	SD	Min	Max
Country	Overall	73.86	41.93	1	145
	Between		42	1	145
	Within		0	73.86	73.86
Year	Overall	2001	7.62	1985	2014
	Between		2.04	2000	2010
	Within		7.46	1985	2015
GDP Per Capita	Overall	13,862	16,976	142	159,825
	Between		15,346	521	83,197
	Within		6,587	-37,812	99,707
Human Rights Score	Overall	.127	1.46	-3.07	5.13
	Between		1.36	-2.48	4.84
	Within		.51	-2.3	2.04
Political Rights Score	Overall	3.8	6.38	-10	10
	Between		5.83	-10	10
	Within		2.64	-12.54	15.31
Child Mortality Rates	Overall	5.33	5.64	.25	33.12
	Between		5.26	.42	21.47
	Within		2.1	-5.83	19.66
Average Schooling Years	Overall	7.15	3.29	.29	14
	Between		3.18	1.15	12.81
	Within		.97	2.23	10.22

Table 2 reports the means and standard deviations for panel data, this is different from basic descriptive statistics as it decomposes the standard deviation into between and within components. The “within” standard deviation value becomes more homogenous, thus giving the data less deviation. There are 3,466 observations in the data set. The Year variable indicates the minimal year is 1985 and the max year is 2014, this reflects the time frame that is being observed. The average GDP per capita per country is \$13,862

and the standard deviation for all the cases is \$16,976. In respect to GDP per capita between countries, this values at \$15,346. However, the standard deviation for GDP per capita between countries is \$15,346 compared to the standard deviation within countries is \$6,587.

Similarly, the Human Rights Protection Score ranges from -3.07 to 5.13 (the higher the better). The summary of this data indicates the overall Human Rights Protection Score standard deviation is 1.45, compared to the standard deviation between countries that values at 1.36 and the standard deviation of Human Rights Protection Score within countries that values at .51. What's important to note is the minimum and maximum between countries of this variable that ranges from -2.3 to 2.04, this range suggests that as time has progressed countries have had higher levels of Human Rights Protection Score.

As previously stated, Political Regime Score ranges from -10 (autocracy) to +10 (full democracy). The overall political regime score is 3.8 indicating the average regime type of countries are anocracies. The overall standard deviation for Political Regime Score is 6.38. Also, the standard deviation of Political Regime Score between countries is 5.83, within countries is 2.64. The standard deviation within countries, 2.64, tells us that there isn't a lot of variation of political regime change within countries.

Child Mortality Rate measures the probability per 1,000 that a newborn baby will die before the age of 5. The mean of this variable indicates that the average mortality rate is 5%. In comparison to the min .25% and the max, 33%, this average is toward the lower

end of the this range, indicating that on average there is a 5% probability per 1,000 that a child will die before the age 5, or 50 out of 1000 children will die before the age of 5.

Lastly, the variable Average Years of Schooling measures the average total years of schooling for the adult population. The minimum value is less than one year (.29 years) and the max is 14 years. The overall average of schooling in adults is 7 years, the standard deviation in the overall dataset is 3 years. Comparatively, within countries the standard deviation is .97, indicating there is not a large fluctuation in years of schooling within countries.

Table 3

Pooled Time Series Cross Sectional Analysis

GDP Per Capita	Coef.	St.Err.	t	p-value	[95% Conf	Interval]
Human Rights Protection Score	1305.419***	212.3018	6.15	0.000	889.1627	1721.674
Political Regime Score	-.236.1951***	40.46497	-5.84	0.000	-315.5339	-156.8562
Child Mortality Rate	477.7378***	54.89573	8.70	0.000	370.1049	585.3707
Average Years of Schooling	3914.652***	118.0083	33.17	0.000	3683.275	4146.028
Constant	-15968.89	1002.006	-15.94	0.000	-17933.51	-14004.28
R-squared within	0.29	<u>N 3,466</u>				
R-squared between	0.375					
R-squared overall	0.376					

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

In terms of significance, Average Years of Schooling is the most significant variable, followed by Human Rights Protection Score, Child Mortality Rate, and Political Regime Score. Upon running the fixed effects model, a one-point increase in schooling is associated with an increase in GDP per capita by \$3,914. On average, a one-point increase in Human Rights Protection Score, is associated with \$1,305 increase in GDP per capita. Yet, a one-point increase Child Mortality Rate increases GDP per capita by \$477. However, on average a one-point increase in Political Regime Score is associated

with a decrease of \$236 in a country's GDP per capita. This study contradicts the preconceived notion that democracy is positively associated with a higher GDP per capita. The p-values less than 0.05 show that a significant difference does exist. Additionally, Rho indicates the proportion of the variation that is being explained by the country's individual attributes. This model indicates that individual countries internal consistency explains a large proportion of the variation, specifically 82%. R^2 indicates that the fixed effects model explains 29% of the variation within a given country over time and 38% of the cross-sectional variation across countries within a time period and 38% of the pooled time series cross-sectional variation overall. This study finds that years of schooling is much more significant in increasing GDP per capita than a country's Political Regime Score. However, not only does political regime not have a positive association with GDP per capita, rather a one-point increase in Political Regime Score (the higher the score, the more democratic) this results in \$236 less in GDP per capita.

Not only do the results of this study signify that democracy is not a large indicator of a country's economic growth, rather countries with democratic regimes are associated with a \$236 decrease in GDP per capita holding other variables constant. This finding carries profound implications as there is a large consensus indicating democracy improves economic growth as a result of liberalization and a free market system. However, this is worth delving further into as the results of this study using social variables indicate otherwise. The second significant indicator of increase in economic growth was the human rights protections score. Countries that are less likely to execute, regulate religion, or censor the press are positively associated with an increase in GDP per capita. In 2014, the countries with the lowest levels of child mortality rates include

Slovenia, Finland, Singapore, Luxembourg, Japan, and Norway. However, of these six countries Singapore was the only country whose political regime score was -2, leaning more towards an autocracy country. Thus, democracy is not solely indicative of higher GDP per capita.

Chart 1

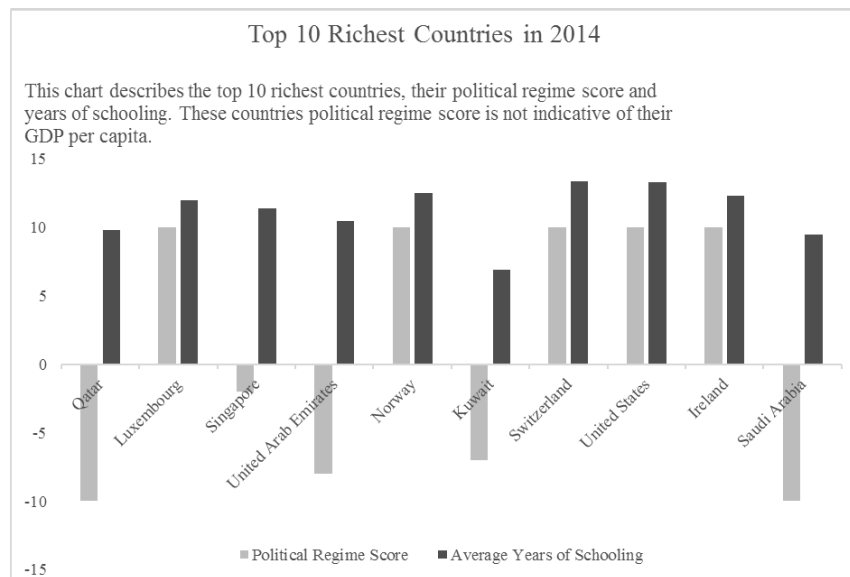


Chart 2

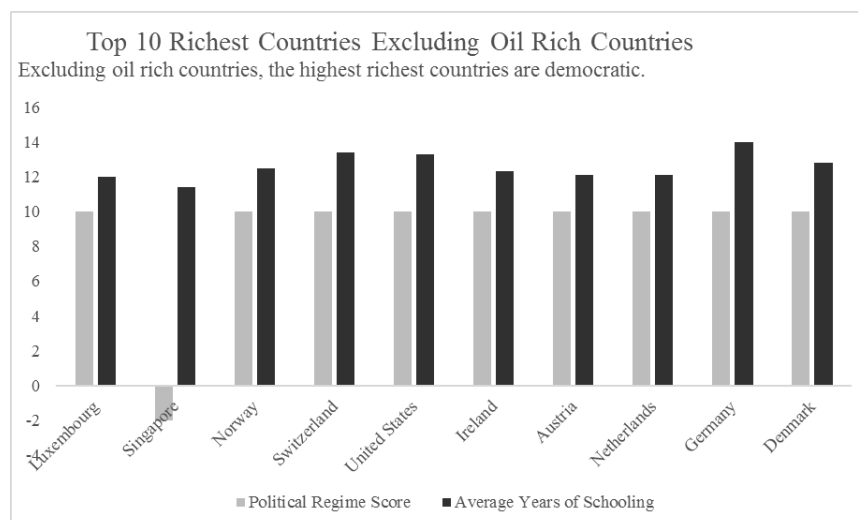


Chart 1 shows the top 10 richest countries in 2014; Qatar, Luxembourg, Singapore, United Arab Emirates, Norway, Kuwait, Switzerland, United States, Ireland, and Saudi Arabia. This chart also includes the political regime score and the average years of schooling. According to this chart, of these top ten countries, Qatar, UAE, Kuwait, and Saudi Arabia are oil producing countries whose political regime score ranks autocratic. Chart 2 excludes these four oil producing countries and the chart indicates that countries with the highest GDP per capita have high political regime scores, implying democratic regimes, and higher average years of schooling. It is possible oil rich countries can stay autocratic by “buying” off their citizens, therefore in future studies, it would be meaningful to exclude such countries when measuring the effect democracy has on economic growth.

Conclusion

This study aimed to research social indicators affecting citizens of the country by measuring Human Rights Protection Score, Political Regime Score, Child Mortality Rate, and Years of Schooling and the effects this has on economic growth, measured by GDP per capita. This study finds schooling to be the most significant indicator of economic growth as a one-year increase in schooling is associated with a \$3,914 increase in GDP per capita. A one-point increase in Human Rights Protection Score, is associated with \$1,305 increase in GDP per capita. Yet, a one-point increase Child Mortality Rate increases GDP per capita by \$477. However, on average a one-point increase in Political Regime Score, the variable used to measure democracy, is associated with a decrease of \$236 in a country’s GDP per capita. This result contradicts the notion that democracy has

a positive influence on economic growth. The social indicators applied in the study indicate that democracy decreases a country's GDP per capita. These results contradict the consensus that democracy is positively associated with economic growth. The variables used in this study are central elements of society and are worth further researching to educate and change the verbiage that is associated when promoting democracy. Democratic countries may open the way for citizens to participate in elections and voting for representatives but not necessarily to improve economic growth. These findings are important because it can be of great use to countries who are seeking independence or are newly independent countries that are striving for economic stability. From these results, it can be gathered that public education or making education affordable will improve the country's total economic output, thus making the country more prosperous. The second significant indicator of increase in economic growth was the Human Rights Protection Score. Countries that are less likely to execute, regulation religion, or censor the press are positively associated with an increase in GDP per capita. In future studies, the research should include how many years a country has been democratic as it is plausible that countries that have been democratic for over 100 years, for example, have a higher GDP per capita than countries who have been democratic for 20 years. Additionally, there is much debate whether countries that have an abundance of natural resources such as fossil fuels have more or less economic growth as a result of these resources. This study merits further investigation into researching the indicators that contribute to resource rich countries and what makes these country's economies overperform or underperform. A limitation this study faced was the dichotomy of identifying regimes as autocracy or democratic, this limits the study from researching

other “in-between” regimes that can influence economic growth, such as oligarchies, liberal democracies or closed autocracies. Additionally, this study found that democracy is not positively associated with economic growth, as it decreases GDP per capita. Future research on this topic should study the government’s ability and timeliness to develop and pass policies designed to distribute economic wealth to its citizens and in return improve their overall economic growth. This proposed research will further attempt to explain the indicators that are associated with improving economic growth in countries.

References

- Baum, Matthew A., and David A. Lake. "The Political Economy of Growth: Democracy and Human Capital." *American Journal of Political Science* 47, no. 2 (2003): 333-47. doi:10.2307/3186142.
- Doucouliafos, Hristos, and Mehmet Ali Ulubaşoğlu. 2008. "Democracy and Economic Growth: A Meta-Analysis." *American Journal of Political Science* (Wiley-Blackwell) 52 (1): 61–83. doi:10.1111/j.1540-5907.2007.00299.x.
- Drury, A. Cooper, Jonathan Kriekhaus, and Michael Lusztig. "Corruption, Democracy, and Economic Growth." *International Political Science Review / Revue Internationale De Science Politique* 27, no. 2 (2006): 121-36. <http://www.jstor.org/stable/20445044>.
- Heckelman, Jac C. "Explaining the Rain: "The Rise and Decline of Nations" after 25 Years." *Southern Economic Journal* 74, no. 1 (2007): 18-33. <http://www.jstor.org/stable/20111950>.
- Helliwell, John F. "Empirical Linkages between Democracy and Economic Growth." *British Journal of Political Science* 24, no. 2 (1994): 225-48. <http://www.jstor.org/stable/194169>.
- Kriekhaus, Jonathan. 2006. "Democracy and Economic Growth: How Regional Context Influences Regime Effects." *British Journal of Political Science* 36, no. 2: 317-40. <http://www.jstor.org/stable/4092232>.
- Ishtiaq, Muhammad, Muhammad Tariq Majeed, and Muhammad Sohail. 2016. "Financial Sector, Democracy and Economic Growth: A Panel Data Analysis." *Pakistan Development Review* 55 (4): 437–53. doi:<http://pide.org.pk/>.
- Knutsen, Carl Henrik. 2015. "Why Democracies Outgrow Autocracies in the Long Run: Civil Liberties, Information Flows and Technological Change." *Kyklos* 68 (3): 357–84. doi:<http://onlinelibrary.wiley.com/proxy1.library.jhu.edu/journal/10.1111/%28ISSN%291467-6435/issues>.
- Ma, Tay-Cheng and Lishu Ouyang. 2016. "Democracy and Growth: A Perspective from Democratic Experience." *Economic Inquiry* 54 (4): 1790-1804. doi:10.1111/ecin.12337. <https://onlinelibrary.wiley.com/doi/abs/10.1111/ecin.12337>.

- Piatek, Dawid, Katarzyna Szarzec, and Michal Pilc. 2013. "Economic Freedom, Democracy and Economic Growth: A Causal Investigation in Transition Countries." *Post-Communist Economies* 25 (3): 267–88.
doi:<http://www.tandfonline.com.proxy1.library.jhu.edu/loi/cpce20>.
- Raffalovich, Lawrence, and Chung Rakkoo. 2014. "Models for Pooled Time-Series Cross Section Data" *International Journal of Conflict and Violence* 8 (1)
<https://pdfs.semanticscholar.org/a3b0/56fac186bb4030951def1bflfa99d9205ce2.pdf>.
- Roser, Max. 2019. "Democracy". Our World In Data. *University of Oxford Global Change Data Lab* <https://ourworldindata.org/democracy>.

Curriculum Vita

Lina Garcia was born in Bogota, Colombia on May 31, 1995. Upon taking a Research/Methods course as part of the curriculum for her Bachelors degree in Government and International Politics, she was introduced to quantitative methods and empirical methods via statistical techniques. This what drove Lina to pursue a Master's degree in Government Analytics. Upon graduating from Johns Hopkins University, Lina is eager to take what she learned at the Advanced Academic Programs and aspires to apply it in a Data Scientist position.